

109. *Polyscia ochrilinea* sp. nov.

Forewings: pale ochreous, with a tinge of olive, dusted with minute black specks; an indistinct oblique olive line from inner margin at one-fourth, retracted to costa; a small dark cell-dot; exterior line olive, straight from apex of forewing, where it is tinged with pink, to middle of inner margin of hindwing, followed by an olive band, which broadens from apex of forewing to inner margin, and on hindwing is equally broad throughout; a submarginal pale space, followed by another band of olive, with fine dark specks; fringe concolorous.

Hindwings: without basal line; the wings are palest immediately before the oblique line, the base and costa of forewing being suffused with olive.

Head, face, and thorax like base of wings; abdomen paler. Underside straw-colour, with numerous dark transverse fuscous strigae, coarser than those of upperside.

Expanse of wings: 38 mm.

One ♂ from the Khasias.

ON ORNITHOLOGICAL COLLECTIONS MADE BY
MR. ALFRED EVERETT

IN CELEBES AND ON THE ISLANDS SOUTH OF IT.

By ERNST HARTERT.

BEFORE Mr. Everett's first collections from the Eastern Islands arrived at this Museum, it was planned that Mr. Rothschild, who is so keenly interested in the zoology of the Eastern Archipelago, and I should work out the birds together, but unfortunately Mr. Rothschild found himself too much engaged at present with entomology and other work. He therefore entrusted me alone with the work of the collections under consideration, which we had promised Mr. Everett should be studied without much delay. I must here express my thanks to Mr. Rothschild for giving this most interesting work into my hands, for I have hardly ever studied a collection with more interest than these well-prepared skins, collected with so much skill and love. Besides, although all the responsibility rests with me alone, Mr. Rothschild has compared many of the skins together with me, and given me several useful hints, but his co-operation did not seem important enough to him to attach his name to these articles as a co-author.

I am also obliged to Hofrath Dr. A. B. Meyer, whose knowledge of Celebes birds is at present unrivalled, for giving me notes on a few species I sent to him for comparison. I gained much important information, besides others, from the recent writings on the birds of Celebes of Messrs. A. B. Meyer & L. W. Wigglesworth, and of Dr. Büttikofer, who too most kindly compared some of my specimens with his types for me. Again, as so often before, am I further obliged to Messrs. Sharpe and Grant in the British Museum, who enabled me to compare with great ease the species I wanted to see in cases where the Tring Museum had not yet sufficient material for comparison. The mixed ornithology of the small southern islands necessitated special care, and the comparison of comparatively many descriptions and skins from several regions. Any notes given on the labels have been faithfully inserted in these papers.

I.

ON THE BIRDS FROM SOUTH CELEBES.

Our friend Mr. Everett, of whose unlucky journey to the Philippines I reported in this journal, Vol. II., pp. 64, 486 ff., left Labuan again on August 21st for Celebes, and arrived at Makassar on September 16th. After some short stay in that town, he determined to work the *Bonthain Peak*, an enormous mountain of nearly 10,000 feet in the south of the Southern Peninsula of Celebes. He proceeded to *Bulekomba*, on the south coast; but the mountain being evidently inaccessible from the west and south, he went round to Balang Nipa, and travelled thence to Bikeroe, and on as far as *Indrulaman*, a place which is situated at about 2300 feet on the foot-hills of the Peak, about a short day's walk from the mountain itself. He arrived there on September 28th, and then despatched his assistant in various directions in order to ascertain the best route for ascending the mountain, with the result that he sent him to *Tasoso*, the highest village in the district, with three of his Borneo men and full instructions as to what and where they were to collect. Mr. Everett remained himself at *Indrulaman*, where he collected every species of bird that was observed, with the exception of one *Caprimulgus*. His assistant returned on November 1st, having succeeded in reaching the most elevated portion of the summit on October 13th. A few days before his return, the Messrs. Sarasin came to Tasoso from Makassar, and they also ascended to the highest point of the Peak. It is known from Messrs. Meyer & Wieglesworth's article in the *Abh. und Ber. Mus. Dresden* how successfully they collected there. As their specimens reached Europe long before those of Mr. Everett, and as they fell into the able hands of our colleagues in Dresden, it was natural that they were described first, and that in this way Messrs. Sarasin's birds anticipated several of the most interesting discoveries, such as *Zosterops anomala*, *Cryptolopha sarasinorum*, *Pachycephala bonthaina*, and others. Nevertheless there remained much to reward Mr. Everett's efforts, as can be seen from the discoveries of the *Androphilus everetti*, *Chlorocharis squamiceps*, and *Cataponera*, as well as from many other valuable things, dilated on in the following pages.

The following extracts from Mr. Everett's letters will be of interest :—

"My men worked altogether for twenty-three days on the Peak, collecting for the most part between 6000 and 7000 feet, and not at all below 5600 feet. No doubt a collector remaining several months on the mountain, and changing his station several times, would make large additions to its fauna, especially if working immediately after the wet season. The Peak seems to represent an ancient volcanic vent, being composed of a number of summits and ridges forming the walls of a crater, the eastern of which would seem to have been blown away. The country between Balang Nipa and the mountain is wholly composed of old volcanic rocks and disjectamenta, and neither on the eastern side nor in travelling to Bulekomba did I see any sedimentary rock whatever. Of the remaining walls the highest is a ridge called locally Lampo Batang, the next in altitude being the peak known as Buah Kraïng. The former is a little below 10,000 feet, and the latter, according to Messrs. Sarasin, about 9000 feet. The Buah Kraïng was found by my assistant covered with arboreal vegetation to its very top, but the trees were very stunted and thickly clothed with mosses. He found the temperature 'at midday' on Buah Kraïng to be only 49° F. At Indrulaman 60° was the *lowest* temperature noticed.

Messrs. Sarasin informed Mr. Dumas that 42 F. was registered at night on the top of Lampo Batang. Nobody has as yet passed a night on the summit of Buah Kraïng."

"The entire country surrounding Bonthain Peak is old cultivated land—rice-fields next the shore, coffee, tobacco, rice, maize, scrubby secondary jungle, fields of coarse grasses, etc., inland—and it is quite denuded of primitive forest up to an elevation of some 5000 feet, or even more, on the eastern aspect of the mountain. Hence the mammalian fauna below that elevation is very poor, even for Celebes. Wild pig, deer, and a rat which is, I think, *M. neglectus* Jent., abound, and in the villages a shrew; and *Cuscus celebensis* is fairly common in the coffee-plantations. I also obtained a single individual of the Celebes Tarsier. But not a single monkey or squirrel was seen or heard by any of us, the peculiar jungle-rats of the island were not to be found, there was no *Anoa* and no *Babirusa*, and even bats were seldom seen. Even in the old forest above Tasoso only one species of squirrel was observed, and of that few were met with. Some black monkeys were seen once—probably *Macacus manrus*—and the quill of a porcupine was found beside one of the traps set at 6500 feet, from which it had escaped. A jungle-rat with bi-coloured tail was obtained, and the *Anoa* was said by the natives to be plentiful, but the *Babirusa* neither they nor the Buginese in the lower country had heard of as inhabiting this part of Celebes. The *Cuscus* was not met with by my party on the mountain, although both *C. ursinus* and *C. celebensis* seem to exist in the lower country, nor did they encounter any *Viverra* or *Paradoxurus*, but the natives say that *V. tanga-lunga* is common in the coffee-plantations."

1. *Merula celebensis* Büttik.

♂. Upperside dark olive (Ridgw., *Nomencl. Colours* III. 9), wings and tail more blackish. Under wing-coverts, chin, throat, and upper breast pale olive; palest on chin, which is pale hair-brown (Ridgw., *l.c.* III. 12), darkening towards the breast. Whole abdomen pale cinnamon-rufous, paler in the middle and whitish on the vent, dark olive-brown with whitish tips and lines along the shafts. Bill and feet yellowish (in skin). Wing 125—129 mm. The *female* is browner on the breast.

Bonthain Peak, from about 6000 to 7000 feet upwards to the highest regions.

2. *Pratincola caprata* (L.).

♂ ♀. Indrulaman. A nest with three eggs found at Indrulaman, October 3rd, 1895. They agree with Indian specimens, and measure 17 to 18 by 14 to 14.4 mm.

3. *Phylloscopus borealis* (Blas.).

Bonthain Peak, 5500 feet.

4. *Phyllergates riedeli* Mey. & Wigl.

Three *males* and a *female* from Indrulaman. Hofrath Meyer has compared one of the *males* with the type and declared them to be the same. The shade of colour on the crown varies. The *female* has the head uniform with the back.

5. *Cisticola exilis* (Vig. & Horsf.).

Indrulaman. ♂. "Iris yellow-brown; bill sepia; mandible pale horn-brown; legs flesh-colour."

6. *Cisticola cisticola* (Temm.).

Makassar.

7. *Trichostoma finschi* Wadd.

Several specimens shot in October from Makassar. Dr. A. B. Meyer compared one of our skins with his five specimens of June and July in the Dresden Museum. He found them to be alike, though our skin was slightly browner, specially on the tail and tail-coverts. This is probably because our birds are in very fresh plumage.

8. *Cataponera turdoides* Hartert (*antea*, p. 70).

In the somewhat rounded wing the first primary is of about half the length of the second, the fifth or the sixth is longest, the fourth, fifth, and sixth generally not differing much in length. The outer web of some of the middle primaries are slightly emarginated from about the middle. The tarsus is covered with an unbroken lamina in adult birds, only at the lower part a scale or two can be distinguished. In an immature bird before me, however, the ridges of the margins of scales can still be distinguished in the middle part of the tarsus! This young bird also has pale shaft-lines on the head, and on the breast and abdomen some feathers with pale centres and dark brown margins, like those of some young thrushes, have remained. Behind the eye is a small but conspicuous bare space. The nostrils are longish; the feathers extend towards the nostrils. There are bristles on the rictus and also on the tips of the feathers of the chin. The colours have been described *l.c.*

9. *Androphilus everetti* Hartert (*antea*, p. 69).

This interesting little bird was found all over the Bonthain Peak and surrounding hills, from about 2000 feet near Indrulaman to above 7000 feet near the summit. Unless some of the specimens are wrongly sexed, there is no constant difference in size between the sexes, but some of the birds from the higher elevations are longer, one of them being a perfect giant, with a wing of 64 mm. in length. In some specimens the feathers of the breast have dark shaft-stripes.

10. *Acmonorhynchus aureolimbatus* (Wall.).

Indrulaman and Makassar. Specimens from these places do not differ from those from Northern Celebes. The iris is burnt sienna-colour. Bill black; mandible greyish; legs and claws black. The species is included in the genus *Prionochilus* in the *Cat. B. X.*, though that genus is said to have "a distinct bastard primary," and *P. aureolimbatus* does not have it. I have therefore provisionally accepted the proposed generic name of *Acmonorhynchus* for this bird.

11. *Dicaeum celebicum* Müll. & Schleg.

Makassar and Indrulaman.

12. *Dicaeum nehrkorni* Blas.

Herr Prof. Dr. Willh. Blasius has been kind enough to compare one of our specimens with the type of *D. nehrkorni* and found them to be the same species. It has never been described in a scientific journal. The original description appeared in the *Braunschweigische Anzeigen*, a newspaper (!), and was, I believe, reprinted in

Russ's *Isis*, both places not easily accessible to an ornithologist; and the *female* has never been described, as far as I know. I therefore append a short description of both sexes:—

♂ ad. Top of the head and forehead, feathers of the rump (somewhat elongated), and a small spot on the upper breast scarlet; hindneck and remiges black; back, scapulars, and upper wing-coverts deep steel-blue; ear-coverts, chin, throat, and sides of body ashy, darker on the latter; axillaries, tufts under the wing, under wing-coverts, under tail-coverts, and abdomen white, a blackish stripe along the middle of the abdomen.

Total length about 80 mm.; wing 49—51 mm.; tail about 26 mm.; culmen 9—10 mm.

"Iris brown; bill, feet, and claws black" (A. Everett).

♀ ad. (breeding). Upperside dark ashy grey, crown washed with rufous brown, rump light scarlet; wings and tail blackish. Underside whitish; sides of head and neck, sides of body, and an (often irregular) line along the middle of the abdomen ashy; axillaries, under wing- and under tail-coverts white.

"Iris brown; bill black; base of mandible paler; feet bluish grey; claws blackish."

The immature *male* resembles the *female*, but seems to be darker above, and has *no scarlet* on the rump in very early age.

This pretty bird was not rare near Indrulaman, 2000 to 3000 feet, and was also met with on the Bonthain Peak at heights of 5000 to 6500 feet.

13. *Cinnyris frenata dissentiens* subsp. nov.

An adult pair in good fresh plumage from Indrulaman (October 1895) are evidently most nearly related to *C. frenata plateni* Blas., the form of this sunbird which inhabits many parts of Celebes, and which is *very* closely allied to *C. frenata typica*. The new form is less greenish and very much darker above, where it is of a dark OLIVE colour, and the abdomen is *much* paler yellow. The colour of the throat of the *male* is also of a different shade, but this is liable to individual variation.

Besides these two skins we have received five from Saleyer, which I must refer to this same form. The abdomen of all these Saleyer specimens is paler sulphur-yellow, and the under tail-coverts whiter; but the specimens are not quite alike, and none of them is in such fresh plumage. They are also slightly paler and more greyish above (but not greenish, like *C. frenata typica*), but I am inclined to ascribe these differences to the more worn plumage.

14. *Cinnyris porphyrolaema* (Wall.).

This rather distinct Celebes species was procured at Bulekomba and Makassar. A young *male* from the latter place (September) is in full moult, the dark black and metallic feathers appearing here and there in the dull plumage, chiefly so on the wings and flanks. Another *male*, in full plumage, has the first primaries not yet full grown.

♂. "Iris brown; bill glossy black; legs dull black; claws blackish."

15. *Aethopyga flavostriata* (Wall.).

One *male* from Indrulaman, quite similar to a skin from North Celebes in the Tring Museum, but bill (and wing?) rather shorter; culmen 18 mm.; wing damaged, but apparently a little shorter.

16. **Anthreptes malaccensis celebensis** (Shell.).

Makassar. Common.

17. **Myzomela chloroptera** Walden.

Bonthain Peak, from 2500 to above 6000 feet.

♂ ad. Iris brown; bill very dark brown, almost black; legs and claws light olive-brown.

♀ ad. Iris brown; bill very dark brown, basal portion paler; legs and claws olivaceous brown.

18. **Melilestes celebensis meridionalis** Mey. & Wigl. (*Abh. und Ber. Mus.*

Dresden, 1896, No. 1, p. 11).

On Bonthain Peak, at elevations of 6000 feet and above.

The sexes are alike in colour, but the *females* have shorter wings and bills.

19. **Zosterops anomala** Mey. & Wigl. (*l.c.* 1896, p. 12).

Apparently common at Indrulaman. The bare black ring round the eyes without white plumes, surrounded by some black feathers, characterises this species easily. It is well described, *l.c.*

20. **Zosterops sarasinorum** Mey. & Wigl. (*J. f. O.* 1894, p. 114).

Dr. A. B. Meyer has kindly compared one of our specimens with his type in the Dresden Museum and declared them to be the same. The description, however, does not quite agree. The breast and abdomen are not "fast rein weiss," but of a pale sulphur-yellow, more so in the middle, the under tail-coverts of the same yellow as the *middle* of the throat. The forehead is greenish yellow. Dr. Meyer's specimens were collected by Messrs. Sarasin on Mount Klabat, in the Northern Peninsula of Celebes, at elevations of 2000 metres. Mr. Everett's skins came from elevations above 6000 feet from Bonthain Peak.

21. **Zosterops intermedia** Wall.

Specimens from Indrulaman and Bonthain Peak to elevations of about 6000 feet.

22. **Chlorocharis squamiceps** Hartert (*anteà*, p. 70).

l.c. I gave a diagnosis and description of this new species to which I have little to add. It was collected at elevations of 6000 to about 7000 feet, where it seemed to be common. The specimens are all alike, mostly in fairly fresh plumage, but some moulting. The bill of the skins is black; the legs seem to have been bluish, with yellowish or greenish soles. The mandible and legs are light-coloured in skins of *Chlorocharis emiliae*, but I cannot find any characters to separate the two species generically; and, as stated *l.c.*, I consider *Chl. emiliae* to be closely related to *Zosterops*, from which genus it is perhaps not separable. Unfortunately no tongues have been secured of my new species.

23. **Motacilla boarula melanope** (Pall.).

Makassar and Bonthain Peak, up to about 6000 feet.

24. *Motacilla flava* L.

Bulekomba.

25. *Munia pallida* Wall.

Two *females* from Bulekomba and Makassar. One of them, in quite freshly moulted plumage, has the top of the head and the hindneck strongly washed with greyish brown; but the other specimen, in abraded plumage, is *much paler* on the head. I therefore do not think that the Celebes bird differs from that from Lombok and Flores, of which I could compare six skins in the British Museum. (See also Mey. & Wigl., *Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 13.)

26. *Munia atricapilla brunneiceps* (Wald.).

See Mey. & Wigl., *l.c.* p. 13. They mention considerable individual variations. Four skins from Indrulaman do not vary much and are typical *brunneiceps*. The birds mentioned by me in Nov. Zool. II. p. 469, from Bunguran, have much darker heads and more rufous backs. So they resemble more the purely black-headed *M. atricapilla typica*, but much of their bright colour may be due to their being in very fresh plumage. I have seen Bornean specimens agreeing with those from Bunguran, though most of them are also slightly paler on the head, and yet a little darker than those from Celebes.

27. *Scissirostrum dubium* (Lath.).

Indrulaman. "Iris dark brown; bill deep chrome-yellow; legs light chrome; nails pale sepia."

28. *Calornis minor* (Bp.).

♂ ♀. "Iris scarlet." Indrulaman.

The principal home of this small *Calornis* appears to be the islands south of Celebes, such as Sumbawa, Flores, Timor, Lombok, etc., and it is much less known as an inhabitant of Celebes, where *C. panayensis* abounds in many parts; but it has been recorded from Celebes long ago by Dr. A. B. Meyer in *Sitz. Ber. Naturf. Ges. Isis*, 1884, I. p. 48, and *Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 4. The tail of this species is certainly not much graduated, but only slightly rounded, nearly square; and altogether *C. minor* stands not very far from *C. chalybea*, though it is decidedly smaller, and the neck much more purple. The wings of the two Indrulaman specimens measure 64—66 mm.

29. *Basileornis celebensis* Gray.

Indrulaman. ♂ ♀. "Iris dark brown; bill greenish white; legs wax-yellow; claws blackish brown."

Specimens from North and South Celebes do not differ.

30. *Acridotheres cinereus* Bp.

Makassar, where it is common.

31. *Artamus leucogaster* (Valenc.) and *A. monachus* Bp.

Indrulaman,

32. *Dicrurus leucops* Wall.

Makassar and Indrulaman. ♂. "Iris milk-white."

33. *Oriolus celebensis meridionalis*.

In *Abh. und Ber. Kön. Zoolog., etc., Mus. Dresden*, 1896, No. 1, p. 14, Messrs. A. B. Meyer & L. W. Wigglesworth have remarked that North and South Celebes birds differ, those from the south having more black in the plumage, and that this point will be discussed in the authors' work on the birds of Celebes. Hofrath Dr. Meyer then wrote me that in the MS. they called the southern Oriole *O. celebensis meridionalis*, and I accept their name herewith, as I consider it a good subspecies. The most characteristic feature of the southern form is the broad black eye-stripe, which fully encircles the occiput, *broadly and quite uninterrupted*. The secondaries are blacker. Makassar and Indrulaman. ♂. "Iris crimson lake; bill reddish sienna-brown; legs olive-grey; claws deep brown."

34. *Gazzola typica* Bp.

Both sexes of this very rare crow from Indrulaman (2500 feet to about 7000 feet on Bonthain Peak). "Iris warm brown." The wing of the *female* about 4 mm. shorter than that of the *male* (208 and 212 mm.).

35. *Corvus enca* Horsf.

Indrulaman, Makassar. Several local varieties of this crow may be distinguished with the help of sufficient material.

36. *Streptocitta albigollis* (Vieill.).

Makassar. This species represents *Str. torquata* in Southern Celebes.

37. *Pachycephala bonthaina* Mey. & Wigl.

A series of skins, collected from elevations of little over 6000 feet to the summit of Bonthain Peak (nearly 9000 feet), belongs, no doubt, to the species named *P. bonthaina*, and well described by Messrs. Meyer & Wigglesworth in *Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 10. Both sexes agree well with the description, except that the under tail-coverts are not of the same colour as the lower back, rump, upper tail-coverts, and flanks; but they are brownish ochraceous, while the latter parts are greenish olive-yellow. The *female* differs from the *male* only in the chin and throat being striped and spotted with pale buff, but the termination of the yellowish cap is not less abrupt than in the majority of the *males*. There is also an immature *male*, which has the whole upperside washed with olive, the whole underside striped with pale brownish buff, the head and neck olive-brown. It seems from this not impossible that *P. bonensis* (Mey. & Wigl., *Abh. und Ber. Mus. Dresden*, 1894-5, No. 4, p. 2) is, after all, the same as *P. bonthaina*, but adult specimens of the northern bird must be awaited to decide by.

38. *Pachycephala meridionalis* Büttik. (*Nol. Leyden Mus.* XV. p. 168, 1893).

Indrulaman and Bonthain Peak to above 6000 feet. Iris chocolate; bill black; legs and feet pale bluish grey; nails dark grey.

Wing of *males*, 84 mm.; of *females*, 80—81 mm.

39. *Graculus leucopygius* Bp.

Indrulaman and Makassar. Iris yellowish white; bill and legs black. A young *male* (September 1895) has the feathers of the head, back, and rump with a terminal buffy white and a subterminal blackish bar; the remiges with buffy white narrow edges; the upper wing-coverts with broad buffy white edges; feathers of throat and breast with blackish subterminal bars.

40. *Volvocivora morio* (Müll.).

Indrulaman, common; very variable. Only rather aged *males* seem to have the throat and upper breast black; the underparts of the *females* and young are more or less deep buff.

♂ juv. and ♀. "Iris chocolate; bill, feet, and claws black."

♂ ad. "Iris dark brown; bill, feet, and claws black."

41. *Lalage leucopygialis* Walden.

Indrulaman. It is wrong to quote *L. leucopygialis* Gray, as the latter author never has described the bird. "The iris of the *male* is chocolate-brown; bill, legs, and claws black."

42. *Lalage timoriensis* (S. Müll.).

Indrulaman and Makassar.

43. *Muscicapa griseosticta* (Swinh.).

Indrulaman.

44. *Muscicapula westermanni* Sharpe.

Mey. & Wigl. (*Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 9) have already shown that this bird inhabits Celebes, but they had received one pair only, and believed that they differed slightly from typical *M. westermanni* from Java and Borneo. Mr. Everett sent a number of fine *males* and two *females*, as well as a young bird. These I have compared with the large series of the species in Tring and in London, and I am able to state that they do not differ in anything from typical *M. westermanni*. The young bird has the feathers of the upperside fringed with black and variegated with a large buff subterminal spot, those of the underside bordered with black.

45. *Muscicapula hypertythra* (Blyth).

Two pairs from elevations of about 6000 feet on Bonthain Peak do not differ in colour from *Muscicapula hypertythra*. Compared with skins of that species from North Borneo, the white line extending from the forehead backwards over the eye is broader and longer. This character, however, does not seem to have any constancy, and Himalayan specimens in the British Museum are perfectly similar to those from Celebes. But the wings of the Celebes birds before me are longer, those of the *males* measuring 65 mm., those of the *females* 61 and 62 mm., while those of my *males* from Borneo measure 56 to 59 mm., those of *females* from the same place 56 mm.; and Messrs. Sharpe & Oates give only 58 mm. as the length of the wing of Indian *males*. So it would seem that the Celebes birds differ in having longer wings, but a larger material than I have before me at present is desirable to work out the local forms of *M. hypertythra*, of which there may be several.

I have not seen *M. hypertythra* recorded from Celebes before.

46. *Siphia omissa* Hartert (*antea*, p. 71).

Indrulaman.

♀. " Iris dark brown; bill black; legs light purplish brown; claws pale sepia."

47. *Siphia bonthaina* sp. nov.

♂. Supra olivacea, remigum marginibus exterioribus rufescentibus; cauda tectricibusque superioribus castaneis. Macula supralorali magna pallide ochracea. Mento, gutture, jugulo, pectore ochraceis. Abdomine subcaudalibusque albis. Al. 65 mm., caud. 47 mm., culm. 13 mm., tars. 19 mm.

♀ similis, pectore guttureque pallidioribus.

Hab. Monte Bonthain Peak dicta, Celebes.

Above olive, quills margined with rufous brown on the outer webs and with light brown on the inner webs. Tail deep chestnut, more brownish on the tip; upper tail-coverts of the same colour. A large spot over the lores; from the base of the bill to the middle of the eye pale ochraceous. Chin, throat, and breast light ochraceous. Abdomen white, bases of feathers slate-colour. Under tail-coverts white with an ochreous shade; under wing-coverts very pale brownish. L. t. about 110 mm.; wing 65 mm.; tail 47 mm. The *female* has the wing only 61 mm., the tail 45 mm., and the chin, throat, and breast are very much paler than in the *male*.

The only pair sent was procured by Mr. Everett's men, at an elevation of about 6000 feet, on Bonthain Peak.

This species belongs to the little section of the genus *Siphia*, as limited in the *Cat. B.* by Dr. Sharpe, in which the sexes are very much alike, both being olive or brown above and with more or less rufous tails, to which *S. erithacus* from Palawan belongs. The birds from Bonthain Peak differ considerably from all the species I am acquainted with and do not agree with any description.

48. *Gerygone flaveola* Cab.

One *male* from Indrulaman.

49. *Hypothymis puella* (Wall.).

Indrulaman and Makassar.

50. *Rhipidura teysmanni* Büttik.

Five skins from Indrulaman.

" Iris dark brown; bill dark sepia; base of mandible white; legs purple-grey."

The *female* and immature *male* have the throat-patch not pure black, but rather washed with greyish.

51. *Culicicapa helianthea* Wall.

Bonthain Peak, from Indrulaman to above 6000 feet elevation.

♂ ♀. Iris dark brown; maxilla dark sepia; mandible ochraceous orange; legs and claws light sepia; soles of feet yellow. The sexes do not differ perceptibly, but young birds have lighter breasts and are not so yellowish above.

52. *Cryptolopha sarasinorum* Mey. & Wigl. (*Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 9).

This excellent new species was found in numbers on the Bonthain Peak, where it was discovered by the brothers Sarasin in the same month when Mr. Everett collected there, *i.e.* October 1895, from Indrulaman to above 6000 feet.

The iris is dark brown; bill sepia-brown; mandible ochreous, tinged with sepia; legs lead-blue; claws light brown.

53. *Stoparola meridionalis* Büttik. (*Notes Leyden Mus.* 1893, p. 170).

Found at Indrulaman, and up to elevations of about 6000 feet. The sexes are alike in colour, but the wing of the *female* seems to be 2 or 3 mm. shorter. The iris is chocolate-brown; the bill, legs, and claws black.

A young bird from Bonthain Peak, 6000 feet, caught in October, has subterminal light brown spots and black tips to the feathers of the upperside; the feathers of the underparts are buff, bordered with black.

54. *Caprimulgus affinis* Horsf.

A perfectly adult *male*, Makassar, September 1895.

55. *Collocalia esculenta* (L.).

Indrulaman and up to about 6000 feet on Bonthain Peak. On November 2nd a colony was found breeding in a cave near Indrulaman. The nests were *not edible*, but consisted of moss, rootlets, lichens, and little twigs, agglutinated and fixed to the walls of the cave with saliva. Eggs were found in a number of nests, and there were always two (or one only if incomplete) in a clutch. The eggs measure from 17 to 18 by 10 to 11.1 mm. They are not quite equal at both ends, but one end is decidedly more pointed.

Messrs. Meyer & Wigglesworth mention of specimens from the island of Banggai that their wings were 69 to 90 mm. long, while those from North Celebes had wings 85 to 97 mm. long. Those from Indrulaman have the wings 95 to 102 mm. long. Unless many of the skins before me are wrongly sexed, which seems not to be possible, these differences are not sexual, nor can I account for them in any other way.

56. *Halcyon chloris* (Bodd.).

Up to at least 6000 feet on Bonthain Peak.

57. *Ceycopsis fallax* (Schl.).

♀. Indrulaman, 2300 feet, October 1895. "Iris dark brown; bill and feet and nails bright coral-red; middle of culmen faintly tinged with black."

This specimen differs from three skins from Lambek, North Celebes, in having the interscapular region of the same brown colour as the wing-coverts and scapulars, while the Lambek skins have the interscapulum light rufous. Hofrath Meyer, who has more material to compare, kindly informed me that he had specimens from the north which did not differ from our Indrulaman skin.

58. *Coracias temmincki* (Vieill.).

September, Makassar; November, Bulekomba.

"♀ ad. Iris chocolate; bill black; feet olive-yellow; claws black."

59. *Microstictus wallacei* (Tweedd.).

Indrulaman. "Iris lemon-yellow; bill black; feet greyish olive; claws blackish brown."

60. *Iyngipicus temmincki* (Mall.).

Indrulaman and Makassar.

♂. "Iris crimson-lake; bill black; mandible grey towards the base; feet dirty greenish; nails brown."

61. *Cuculus intermedius* Vahl.

Two grey *males*, Indrulaman. One of them is very much broader-barred than the other.

Two *females*, Indrulaman, both in the *rufous* plumage. "Iris raw sienna-brown; bill brownish black; basal half of mandible greenish yellow; eyelids pure chrome-yellow; feet wax-yellow; claws light brown."

62. *Cacomantis virescens* (Brügg.).

Indrulaman and Makassar.

63. *Chalcococcyx malayanus* (Raf.).

♂ ♀. Indrulaman and Makassar. ♂. "Iris clay-brown; eye-wattle scarlet; bill black; legs greyish black; claws black."

64. *Chalcococcyx basalis* (Horsf.).

A *female* belonging to this species, shot on the Bonthain Peak 6000 feet high. The longer wing (this ♀ has it 97 mm. long), *both* webs of the second rectrix from outside being rufous for the basal two-thirds, the rather broader and paler bands of the breast, a superciliary whitish line, and a broad dark line from the eye along the sides of the neck distinguish this species without difficulty from *Ch. malayanus*, which is a usual inhabitant of Celebes. I am not aware that *Ch. basalis* has been found before in Celebes, but as it inhabits "Australia, Aru Islands, Timor, Flores, Lombok, Java, and reoccurs in Malacca" (Shelley, *Cat. B.* XIX. p. 295), it is not to be wondered at much.

65. *Scythrops novaehollandiae* Lath.

Indrulaman. ♂ ad. "Iris, orbit, cere, and nostrils crimson-lake; bill horn-white, clouded with plumbeous grey; feet dark plumbeous."

66. *Surniculus muschenbroeki* Meyer.

The greatest surprise to me in this collection was a pair, or rather two *males*, of this cuckoo, of which only one specimen, a *female*, procured in Batjan by Dr. A. B. Meyer's hunters, was known. Cf. Meyer in Rowley's *Orn. Misc.* III. p. 164, *Cat. B.* XIX. p. 230. Though the specimens before me agreed fully with the original description, I thought it best to have them compared with the type, and therefore sent them to Dr. Meyer, who kindly wrote me that they fully agreed with his bird. The wing of *S. muschenbroeki* has been given as 140 mm., while my specimens have wings of 134—135 mm. only; but Dr. Meyer was kind enough to inform me that really the wing of his bird is only 136 mm. long, according to his own recent

measuring. In one of our *males* the white on the occiput is much more developed than in the other, and in the type there is a *little* less even than in the latter. The white on the shortened outer rectrices is also a little more marked in the two Celebes specimens, and one of them has also a narrow white tip to one of the longest rectrices. All these characters, however, vary much in the other species of *Surniculus*, and they also differ in the two specimens from Celebes.

The specimens were shot at Indrulaman, and are in perfect plumage.

67. *Phoenicophaes calorhynchus meridionalis* (Mey. & Wigl.) (*Abh. und Ber. Mus. Dresden*, 1896, No. 2, p. 11).

Three skins from Indrulaman (*breeding* at the time, according to Mr. Everett) differ considerably from the bird from Northern Celebes in having a much paler crown and a decidedly paler throat, and it seems that also the tail is about half an inch longer than in any of the northern specimens. Messrs. Meyer & Wigglesworth have (*l.c.*) proposed the name of *Rhamphococcyx calorhynchus meridionalis* for this form, and the former gentleman kindly compared one of our specimens with their type. The discovery of Count Berlepsch of the difference between the *Phoenicophaes* from the Malay Peninsula and Borneo in the different form of the nostrils clearly shows that the genera *Dryococcyx*, *Urococcyx*, *Rhinococcyx*, and *Rhamphococcyx* cannot be upheld wisely, and the Count also encloses the *Phoenicophaes* of Ceylon in the same genus, the latter name thus having the priority as the generic title of the group.

68. *Centropus javanicus* Dumont.

Indrulaman. "Iris dark brown; bill black; legs and claws blackish plumbeous (*females*)."

69. *Pyrrhocentor celebensis* (Quoy & Gaim.).

Indrulaman. "♂. Iris crimson-lake; bill and orbital skin black; legs and claws blackish plumbeous." These specimens do not belong to *P. celebensis rufescens*, a well recognisable subspecies recently described by Messrs. Meyer & Wigglesworth, who received it from Tonkean. Two of the cotypes of the latter are in the Tring Museum.

70. *Tanygnathus mulleri* (Müll. & Schleg.).

Apparently common at Indrulaman. The ovaries of the adult *females* showed (in October) no sign of enlarged eggs. The bills of the *females* from Indrulaman are white, those of the *males* red.

71. *Prioniturus platurus* (Temm.).

Apparently not rare at Indrulaman. ♂ wing 181—183 mm. ♂. "Iris dark chocolate; bill black, basal half nearly white; feet greenish grey."

72. *Loriculus stigmatus* (Müll. & Schleg.).

Some specimens from Makassar and one from Indrulaman. The adult *male* from Makassar has the red of the crown extended much farther back than the *male* from Indrulaman.

73. *Trichoglossus ornatus* (L.).

Indrulaman. ♂ ad. "Iris orange; bill orange-red; feet greenish grey; nails dark brown."

74. *Pisorhina manadensis* (Quoy & Gaim.).

Indrulaman. ♂. October 1895. "Iris ochreous orange; cere pale brownish; bill olivaceous horn; feet brownish white; claws horn-yellow, the longer ones brown on the distal half."

75. *Ninox punctulata* Quoy & Gaim.

Three *males* from Indrulaman and Makassar. "Iris dark chocolate; bill horn-black; tip and mandible pale horn-colour; feet white; claws dark brown." In the two other specimens the bill is greenish horn-colour, blackish towards the base.

The *male* with the dark bill is of a deep blackish chocolate-colour above; the whitish spots incline to cross-bars only on the back and upper wing-coverts; the markings on the breast and abdomen are very deep brown. The other two *males* are of a paler brown above; the dark colour on the breast and abdomen is more rufous brown; the pale markings above are more like cross-bars, and in one they are really short cross-bars everywhere. When Sharpe described the species in *Cat. B.* Vol. II. p. 183, he said that the whitish spots "inclined to bars nowhere except on the secondaries, and here very minute." However, such specimens seem to be rarer than those where there are cross-markings.

76. *Strix rosenbergi* Schleg.

Indrulaman and Makassar.

♂. "Iris white; bill horn-white, clouded with brown in the middle of the maxilla; feet dirty brownish white; claws dark brown."

This fine owl seems to stand, by its large size as well as by its richly spotted underside and other colour-characters, farther away from *Strix flammea typica* than any of its other numerous subspecies, and may probably well be kept specifically distinct. The wing of our *females* is 330 mm. long, that of our *male* 320.

77. *Spilornis rufipectus* Gould.

Makassar, Indrulaman, and Bonthain Peak, up to about 6000 feet above the sea.

♂ ad. "Iris golden yellow; bill black, basal portion plumbeous grey; mandible plumbeous grey, its apical portion black; cere dirty greenish; eyelids dark yellow; skin of loreal region yellow; legs wax-yellow; claws black."

♂ juv. "Iris golden yellow; loreal skin yellow; legs dark wax-yellow; claws black."

The colour of the breast varies in the old bird, it being much paler in some, in fact as pale as in *Spilornis subuensis*, darker in others. The whole throat and ear-coverts are deep black in an apparently freshly moulted bird.

Mr. Everett procured, during October 1895, fully adult birds, quite young ones, and others in change of plumage.

There seem to me not to be sufficient reasons to separate the *Sula* birds specifically. They can only form a subspecies, those from Peling and Banggai (of which I have now five before me) standing between the two forms and hardly being separable from *Spilornis rufipectus*. See Meyer & Wieglesw., *Abh. und Ber. Mus. Dresden*, No. 1, p. 7, 1896.

78. *Baza celebensis* Schl.

♂. Indrulaman. ♀. Indrulaman. "Iris orange-brown; bill and cere black; legs white; claws brown." The *male* agrees with the figure of this species in *Cat. B.* Vol. I. Pl. X. Sharpe calls it there *Baza erythrothorax*, but Schlegel's name has evidently priority, the article of Sharpe being only received by the Zoological Society of London in June, and therefore certainly not published in that same month. The *female* has the top of the head rufous, broadly streaked with black. It seems to be immature.

79. *Butastur liventer* (Temm.).

Makassar, where it is said to be common. The rufous colour of tail and wings is darker when the feathers appear and fades when they are worn. The upperside is sometimes darker (evidently fresh plumage), sometimes paler, and the dark shaft-stripes are more or less distinct.

80. *Spilospizias trinotatus haesitandus* subsp. nov.

Seven skins of adult birds from Bonthain Peak, from Indrulaman to above 6000 feet, differ from a great number of specimens from North Celebes in having the abdomen paler, in fact white for its greater part, the vent and under tail-coverts pure white, the thighs pure white or with a very faint rosy shade on their upper part only. Above they are mostly very dark, the head and hindneck being distinctly paler than the back and rump. Hofrath Dr. A. B. Meyer has confirmed the above-noted differences *in litt.* I therefore give it a subspecific name, and I believe this to be the right course. The *males* are smaller than the *females*, but do not differ in colour.

The totally different well-known spotted young bird has the iris lake, bill black, loreal region and base of mandible orange-chrome, legs dark chrome, claws black. The adult *male* has the iris chocolate-brown, the bill jet-black, base and cere orange, legs chrome-yellow, claws black. A young *female* in the spotted plumage shows a few slaty feathers above and some salmon-coloured ones on the breast. The generic name of *Spilospizias* is now often used for this bird, but Sharpe (*Cat. B.* I. 1874) included it in the genus *Astur*. I am inclined to think that it cannot be separated from *Astur*.

81. *Accipiter rhodogaster* (Schleg.).

Makassar and Bonthain Peak to above 6000 feet. It is remarkable how closely this bird must at a distance resemble the *Astur trinotatus* of Celebes.

82. *Tinnunculus moluccensis occidentalis* Mey. & Wigl.

Cf. *Abh. und Ber. Mus. Dresden*, 1896-97, No. 2, p. 8, February 1896, where the authors have for the first time separated the very distinct Celebes form from *Tinnunculus moluccensis typicus*. The lighter underparts, lighter under wing-coverts, and the whitish grey ear-coverts are very characteristic. A specimen from Java (collected by Mr. Whitehead) is also referable to this subspecies.

Mr. Everett sent some skins from Makassar and from about 6000 feet on Bonthain Peak.

83. *Circus assimilis* Jard. & Selby.

♂ and ♀ ad., ♀ juv., with feathers of crown, sides of head and neck broadly margined with rusty rufous. ♂ and ♀ juv. from Iudrulaman and Makassar.

♀ ad. "Iris brown; bill black, basal part pale plumbeous; cere and lores greenish; legs very pale wax-yellow; claws black."

♂ juv. "Iris olive-brown; bill black, basal portion pale grey; cere greenish yellow; lores light greenish; legs very pale wax-yellow; claws black."

♀ juv. "Iris golden yellow."

84. *Milvus migrans affinis* (Gould).

♂ ♀. Makassar. The *female* has the culmen distinctly yellow towards the base (in skin).

85. *Ptilopus meridionalis* (Mey. & Wigl.).

Leucotreron fischeri meridionalis Mey. & Wigl., *Orn. Monatsber.* I. p. 12; *Ptilopus meridionalis* Salvad., *Cat. B.* XXI. p. 74.

Bonthain Peak and surrounding hills from about 2500 feet to above 6000 feet. The *female* of this beautiful pigeon is slightly more greenish above, a little more brownish below, and a little smaller. ♂ wing 172—175 mm., ♀ wing 165—166 mm. "♀. Iris orange-red; bill dark leaf-green; feet dull purplish; nails brownish plumbeous."

86. *Ptilopus temmincki* (Des Murs & Prév.) (*Cat. B.* XXI. p. 115).

Ptilopus formosus Gray of the majority of authors.
Indrulaman.

87. *Carpophaga forsteni* (Temm.).

Bonthain Peak, 6000 to 6500 feet.

88. *Osmotreron wallacei* Salvad. (*Cat. B.* XXI. p. 42, Pl. II.).

"♂. Iris orange." "♀. Iris rufous brown, with thin outer ring of dull orange; bill greenish white; cere and base of mandible light green; bare orbital skin lemon-yellow, tinged with green; feet carmine; nails pale brownish grey."

Indrulaman, nesting in October. The *male* rather more brick-red than specimens from Minalassa, Peling, but otherwise not different.

It is remarkable how closely allied this species is to *O. griseicauda* of Java, though the differences pointed out by Salvadori are quite constant.

89. *Osmotreron vernans* (L.).

Bulekomba, S. Celebes, November 1895, moulting.
Wing (complete) 142 mm. (= 5.6 inches).

90. *Chalcophaps indica* (L.).

Indrulaman.

91. *Turtur tigrinus* (Temm. & Kuip.).

Indrulaman.

92. *Geopelia striata* (L.).

Makassar.

93. *Turacoena manadensis* (Q. & G.).

♂. October, Indrulaman. "Iris light brick-red; bare orbital and loreal skin carmine; bill black; feet black, tinged with purple-red; claws black."

♀. October, Indrulaman. "Iris orange-red; orbital skin carmine; feet brown; claws brown."

94. *Macropygia albicapilla* Bp.

♂ and ♀. Indrulaman, October 1895. "♂. Iris with the inner ring blue, the outer carmine; bill black; feet carmine; claws dark brown."

The feathers of the hindneck of the *male* have very strong purplish reflections, but otherwise it agrees with specimens from other parts of Celebes.

95. *Gallus gallus* (L.).

Bulekomba.

96. *Turnix rufilatus* Wall.

Makassar and Indrulaman. ♂. "Iris white; bill greenish yellow; tip and ridge of culmen brown; legs greenish yellow." The *female* has the forehead and lores black, but the *male* has these parts speckled dark brownish black and white or whitish.

97. *Hypotaenidia philippinensis* (L.).

♀ ad. Bulekomba. "Iris crimson-lake; bill light red; apical third horn-brown; legs greyish white."

98. *Gallinula chloropus orientalis* (Horsf.).

♂. Bulekomba. All the specimens of *Gallinula chloropus* from the East now before me are very much smaller than those from Europe, so that I am inclined to believe it can stand as a well-marked subspecies. The *male* from Bulekomba (apparently adult) has the wing only 154 mm.; Sharpe gives 7.3 inches = 185 mm as the length of the *male* of the species in the *Cat. B.* XXIII. p. 173.

99. *Phoebastria manilensis* (Meyen).

Bulekomba. Sharpe considers the Eastern Red Herons to be specifically distinct from the *Ardea purpurea* of Europe, and also places them in a separate genus, *Phoebastria*.

100. *Ardetta cinnamomea* (Gm.).

Bulekomba.

101. *Bubulcus coromandus* (Bodd.).

Bulekomba.

102. *Ardeola speciosa* (Horsf.).

Makassar.

103. *Nettion gibberifrons* (Müll.).(See Salvadori's description and remarks *Cat. B.* XXVII. pp. 255, 256.)

November, Bulekomba. ♂. "Iris lake-red; bill above and feet shining lead-grey." The *females* are *decidedly* smaller than the *males*, the culmen being about 8 mm. shorter, the wings about 10 mm., the middle toe about 4 or 5 mm. shorter. The difference in size of the sexes is remarkable, and seems a further proof that *N. gibberifrons* is really quite distinct from *N. castaneum*, though the *females*, according to Count Salvadori, seem not distinguishable.

It is evident from the above list that much interesting work is still left for an able collector on the higher mountains of Celebes. Such forms as *Merula celebensis*, *Androphilus*, *Chlorocharis*, and perhaps *Siphia bonthaina* show interesting similarities with the ornith of the high mountains of Borneo. The butterflies, I believe, will show corresponding facts. It is most probable that all the very high mountains from North India to the outmost branches of the Indo-Malayan region have great similarities in the fauna of their highest regions—witness the Himalayas, the Gunong Ijau in Perak, the Kina Balu, the high mountains in Java and Sumatra, and Bonthain Peak. They may be remainders of very ancient times, as the fauna of the intervening plains is often totally different. Similar cases are known to exist in Europe and elsewhere. It is most desirable that more of the higher regions of high mountains—that is to say, the parts from above 3000 feet and upwards—should be explored; and there are many left untouched or but partly known, even in better known countries, such as the Malay Peninsula, Sumatra, and Java. It is also of utmost interest to know whether the highest peaks in New Guinea take part of the Indo-Malayan highland ornith, though it is more likely, perhaps, that they are, and have always been, out of their influence.

Species like *Surniculus muschenbroeki* and *Lalage timoriensis* represent Moluccan and Soudanese elements, the occurrence of which will probably appear less remarkable when all the gaps between the different larger groups are filled in, for instance when a thorough exploration of the Sula group has taken place—witness also the ornith of Saleyer, Djampea, and Kalao.

II.

THE BIRDS OF SALEYER, DJAMPEA, AND KALAO.

After the successful exploration of Bonthain Peak in South Celebes, Mr. Everett sent his men to *Saley*, and afterwards went there himself, and also to the islands of *Kalao* and *Djampea*, between Flores and the southern part of Celebes and Saleyer. On some maps they are called "Schiedam Islands," but this name is not generally known. *Saley*, *Salayer*, *Selay*, *Silajara*, or *Boegeroens Island*, is about forty miles long, but only from one to seven miles in width. "It is very populous, and the people are industrious, raising considerable quantities of produce. The teak tree has been planted, and flourishes; cattle, fowls, and vegetables are plentiful, and the woods abound with deer. It is said that this island is the division of the climate systems of the eastern and western parts of the archipelago, the rainy season being reversed, and conforming to the west with the north-westerly and to the east with the south-easterly monsoon" (Findlay, *Indian Archipelago Directory*, p. 803).

Not much is known of the fauna of Saleyer, but lepidoptera have been collected there by several collectors. Ornithologically it was unexplored until 1889, when Prof. Max Weber obtained there twenty-two specimens of birds, representing fourteen species, from January 13th to 19th. Dr. Büttikofer gave a list of these in Weber's *Zoolog. Ergebnisse einer Reise in Niederländisch Ost-Indien*, Vol. III. The species obtained by Prof. Weber were :—

- | | |
|--|---|
| 1. <i>Haliastur leucogaster</i> (Gm.). | 8. <i>Lalage timoriensis</i> (Müll.). |
| 2. <i>Alcedo bengalensis</i> Gm. | 9. <i>Chibia leucops</i> (Wall.). |
| 3. <i>Halcyon chloris</i> (Bodd.). | 10. <i>Treron griseicauda</i> Gray.† |
| 4. <i>Siphia banyanus</i> (Horsf.).* | 11. <i>Ptilopus melananchen</i> (Salvad.). |
| 5. <i>Pachycephala teysmanni</i> Büttik. | 12. <i>Macropygia maccassariensis</i> Wall. |
| 6. <i>P. orphea</i> Jard. | 13. <i>Erythra phoenicea</i> (Penn.). |
| 7. <i>Artamus leucogaster</i> (Valenc.). | 14. <i>Totanus hypoleucos</i> (L.). |

It will be seen from the following article that Mr. Everett's collections have added a good number of species to the Saleyer list. "Small as the number of species recorded by me from Saleyer may be," says Büttikofer, *i.e.*, "it proves nevertheless, by the presence of *Pachycephala orphea* and *Lalage timoriensis*, that the ornithology of this island, which must geographically be looked upon as a continuation of the Southern Peninsula of Celebes, and may also be regarded so ornithologically, represents some relationship with the ornithology of the Timor group, though not with that of Flores, as one might have expected from the geographical situation."

Djampea, Jampea, Tjampeah, or Tana Djampea (the land of Djampea), is the largest island of the little group sometimes called the "Schiedam Islands," and is about fifteen miles in length. It has a rugged appearance and is mountainous, the hills being covered with high trees, but it terminates to the eastward and northward in low points. There are rivers with good water. No birds, as far as I know, have ever been recorded from Djampea, though a list of lepidoptera from that island has been given by Snellen.

Kalao, or *Lumbego* as it is called by the natives, lies less than ten miles to the south-east from Djampea, and is a narrow mountainous island, thirteen or fourteen miles in length from east to west. Off the east end is *Bonerate* Island, with a safe channel between. No list of birds from Kalao has ever been given, nor does any one seem to have collected any birds there; but Messrs. Sarasin visited Bonerate and collected there five species of birds, which were recorded by Messrs. Meyer & Wieglesworth in *Abh. und Ber. Mus. Dresden*, No. 1, 1896, p. 16. They are :—

- | | |
|--|---------------------------------------|
| 1. <i>Artamus leucogaster</i> (Valenc.). | 4. <i>Oriolus boneratensis</i> n. sp. |
| 2. <i>Cyrtostomus</i> sp. | 5. <i>Megapodius duperryi</i> L. & G. |
| 3. <i>Zosterops intermedia</i> Wall. | |

The following list will show the excellent ornithological work done by Mr. Everett and his men on these islands, and we confidently hope that we shall soon receive collections from him from other hitherto unexplored or but imperfectly known islands of the Eastern Archipelago.

1. *Pratincola caprata* (L.).

♂ ♀. Saleyer.

* This is my *S. omis*,—E. H.

† This is *Treron wallacii* Salvad.—E. H.

2. *Phylloscopus borealis* (Blas.).

Saley, one specimen ; Kalao, two specimens.

3. *Dicaeum splendidum* Büttik. (*Notes Leyd. Mus. t.c.*).

A series of both sexes from Djampea. The principal differences from *D. mackloti* are the colour of the throat, which is much lighter, more vermilion, and extends farther down on the breast, and the greatly diminished dark surroundings of the red throat. They are broad and deep black in *D. mackloti*, while they are blackish grey and narrow in *D. splendidum*. The colour of the back varies and is not constantly different in the two species. My birds have been compared with the type in Leyden.

The *female* is dark olive-grey above and on the sides of neck and head ; rump and upper tail-coverts vermilion ; the wings bluish black, with narrow olive outer edges ; tail bluish black. Below creamy white. Axillaries, under wing-coverts, and inner wing-lining white. Wing 51—52 mm. The immature *male* is like the *female*.

♂. "Iris dark brown ; bill black ; mandible grey, palest at base ; feet and claws very dark grey, almost black." ♀. "Iris dark brown ; basal portion of maxilla and two-thirds of mandible dull orange ; feet and claws greyish black."

Dr. Büttikofer described this species from Makassar ! (See *Cinnyris teysmanni*, *Rhipidura celebensis*.)

4. *Cinnyris frenata dissentiens* Hartert (*antea*, p. 152).

As mentioned above, there are five skins from Saleyer, four adult *males* and one immature *male*, which are paler below than my type from Indrulaman, but I have only one from the latter place in the most perfect and freshest plumage, while those from Saleyer are not in such fresh plumage. However, I think it most likely that the Saleyer bird always differs slightly from that from South Celebes. In that case it would have to be considered, so to say, a form of *C. frenata dissentiens*, just as the latter is rather a form of *C. frenata plateni* than of *C. frenata typica* ; but we can only call the present form *C. frenata dissentiens*, and, in case that from Saleyer should constantly differ, would have to call it, by a trinomial, a subspecies of *C. frenata*, as otherwise we should get into a perfect labyrinth of names, which would be impossible to use.

5. *Cinnyris teysmanni* Büttik. (*Notes Leyd. Mus. XV. p. 179, 1893*).

Common on the islands of Djampea and Kalao ; specimens from the two islands do not differ. I sent a *male* to my friend Dr. Büttikofer, who kindly compared it with the type and found them to be identical. The pectoral tufts, however, are more or less tinged with orange in nearly all the specimens before me, but this is absent in a few, probably fading in time. The adult *male* is very exactly described by the author (*l.c.*), but the *female* was not known. It is greyish olive above, washed with green on the rump and the margins of the quills. A whitish yellow superciliary line over the eye. Beneath lemon-yellow, paler in younger birds, and always paler on the throat and under tail-coverts. Under wing-coverts and inner lining of wing whitish. Outer rectrices broadly tipped with white, these tips decreasing in extent

towards the middle, so that the centre ones are only narrowly fringed with white on the tip. Wing about 2 or 3 mm. shorter than in the *male*.

The species has originally been described from the Makassar district in Celebes. It was collected by the distinguished Dutch botanist Teysmann. As the bird is so common on Djampea and Kalao, but was not found in Saleyer, nor near Makassar by recent collectors, one cannot help being somewhat sceptical with regard to the locality "Makassar district," especially as Teysmann travelled over many parts of the Eastern Archipelago, no original labels, as far as I know, having been attached to his birds. Some of his many important discoveries are species peculiar to the Celebes highlands, as we have seen in the preceding article on the birds of Bonthain Peak.

6. *Myzomela chloroptera* Wald.

Saleyer and Djampea. The same as the Celebes form. The young *male* is like the adult *female*. Many intermediately coloured specimens.

7. *Zosterops intermedia* Wall.

Saleyer, Djampea, and Kalao. The species was first described from Celebes (Makassar), but it is said to occur also in Lombok and Ternate.

8. *Anthus gustavi* Swinh.

Djampea and Kalao. This species breeds in Siberia and wanders southwards to Timor, Celebes, and the Moluccas.

9. *Motacilla flava* L.

Saleyer, Kalao.

10. *Munia molucca* (L.).

A series from Saleyer and Kalao. They agree entirely with specimens from Celebes. These latter have been included with his subspecies *propinqua* (from Flores) by Sharpe, *Cat. B.* XIII. p. 368, though he admits that they stood somewhat between the two forms, and have been united with *M. molucca* by Büttikofer, Weber's *Reise*, III. p. 280. Messrs. Meyer & Wieglesworth also say that they are intermediate, but call them *M. molucca* (*Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 13). I cannot see any constant differences between Celebes and Moluccan birds, and those from Saleyer and Kalao do not differ either, though *some* few specimens have perhaps a little whiter breast, thus apparently pointing towards the Flores form.

11. *Artamus leucogaster* (Valenc.).

Saleyer and Djampea. The young bird (Djampea) has a brown beak, a very pale grey throat, the feathers on the back tipped with ochraceous brown, the remiges and rectrices tipped with whitish.

12. *Calornis minor* (Bp.).

Saleyer and Djampea. ♀ juv. "Iris olive-yellow; bill and legs dull black."

13. *Dicrurus leucops* Wall.

♂ ♀. Saleyer. One very young without the glossy tips to the feathers.

14. *Oriolus boneratensis* Mey. & Wigl.

Abh. und Ber. Mus. Dresden, 1896, No. 1, p. 16 (January 1896). Found in Djampea and Kalao, but more numerous in Kalao. This large Oriole has been well characterised by the authors, who had one *female* from Bonerate, collected by Messrs. Sarasin; but it is perhaps nearer to *O. broderipii* than one might have imagined from their description. The size of the bill in *O. broderipii* varies considerably, as does the length of the wing. So does also the width of the black surrounding the crown, but there always remains a considerably larger yellow spot on the crown in *O. boneratensis*, the bill is always larger, and the black surrounding the crown is narrower. The speculum on the wing is mostly *larger* than in *O. broderipii*, but smaller in some (not all) *females*. The primaries do *not* have yellow tips, as they have in *O. broderipii*, but the secondaries *are* tipped with yellow, though the latter varies very much in extent, is wider and more greenish in some *females* and (probably younger) *males*, and is wanting in a few of the *females*. The yellow tips to the secondaries, however, are larger in *O. broderipii*. The extent of black on the rectrices varies much, as in *O. broderipii*, though it is generally extended more towards the tips, but the central rectrices are also tipped with yellow, as in *O. broderipii*, in every one of the large series before me.

The colour is of a *pure and perfect orange* in some specimens; in others some feathers are orange, others yellow; in some the whole plumage is washed with yellow, while others are of a pure lemon-yellow without a shade of orange, and of the latter some have the mantle faintly tinged with greenish. These variations in colour are either due to age or perhaps to food, but not to sex or locality, specimens from Kalao being perfectly similar to those from Djampea. Herr Hofrath Meyer has kindly compared some of my birds with his type of *O. boneratensis*, and declared it to be the same bird. The wing measures 162—173 mm., the tail 123—133, the tarsus 26—29, the culmen 36—38. The sexes are alike, unless many are wrongly sexed.

♂. "Iris deep cinnabar-red; bill white, tinged with rosy red; feet dark olivaceous grey." ♀. "Iris crimson-lake; bill horn-white, tinged with rose-colour; feet dark lead-grey."

15. *Pachycephala teysmanni* Büttik. (*Notes Leydl. Mus.* XV. p. 167).

A series from Saleyer only. ♂. "Iris brown; bill jet-black; legs and feet with claws dark grey." Dr. Büttikofer has kindly compared one of our *males* with his type, and found them to be quite alike. He described it from South Celebes. Further researches must show whether it occurs there too, or whether it is restricted to Saleyer.

The *female* resembles the *male*, but the white of the throat does not extend so far down towards the breast; the top of the head is not dark slaty-grey but paler grey, the lores tinged with ochraceous, the ear-coverts pale fawn-colour with paler shafts. Wing 73 mm. A very young *male*, just out of nest, resembles the old *female*; but the breast and abdomen are white streaked with dark brown, the mantle washed with brown. In the fully adult *male* in fresh plumage the ear-coverts are darker than the crown, in fact almost black.

The *female* of *P. teysmanni* resembles much the *female* of *P. everetti*, but the latter has a larger bill, the head not clear grey, the back and rump not so greenish. The *males* are, as a comparison of the descriptions will show, entirely different, the

latter belonging to the section of the genus in which the *males* are black and yellow and the *females* quite different, while the former belongs to the group in which the sexes differ but slightly.

16. *Pachycephala everetti* sp. nov.

Pachycephala ex affinitate specierum *P. melanura*, *P. clio*, *P. fulvotincta* dictarum, sed ultimae proxima. ♂ ad. Capite et collari pectorali nigris. Mento gulaque pure albis. Pectore, abdomine, subcaudalibus aurantio-flavis. Subalaribus flavescens. Tibiarum plumis nigris et flavis. Collari nuchali (saepè indistincto) flavo, tectricibus supracaudalibus nigris, plus minusve flavo limbatis, notaeo reliquo virescente olivaceo-flavo, plus minusve nigro intermixto. Remigibus nigris, pogoniis externis cinereo marginatis. Tectricibus alae nigris. Rectricibus nigris, olivaceo-viridi terminatis. Al. 80 mm.; caud. 64—66; culm. 19; tars. 23. ♀ ad. Supra olivaceo-brunnea, capite griseo, uropygio ochraceo lavato. Remigibus nigrescentibus, pogoniis externis uropygii colore limbatis. Cauda olivaceo-viridi. Gula albidula. Subcaudalibus citrino-flavis. Gastraeo reliquo ochraceo-lutoso. Subalaribus albidis. Magnitudine maris.

Hab. Insula Djampea sic dicta.

A fine series of this new species from Djampea. The top of the head to the nape, the surrounding of the eyes and ear-coverts, and connected with this black area a band across the jugulum black. Chin and throat white, rest of under surface orange-yellow, a little more orange on the breast; thighs black, but with broad yellow tips to the feathers; an indistinct yellow collar across the hindneck. Interseapulum, back, and rump greenish olive-yellow, more or less mottled with black, caused by the feathers being black towards the base; wing-coverts black, some of the larger sometimes with narrow yellow edges; upper tail-coverts black, sometimes narrowly edged with olive-yellow; wing-quills black, primaries with narrow grey outer edges, secondaries with pale brownish tips; tail black, tipped with olive-green. This is the colour of the majority of specimens. The black lower parts of the feathers above are more or less conspicuous, from the greenish olive-yellow edges being narrower or broader. In a few specimens there are no black spots at all on the upperside. These must, I think, be very old individuals, as a bird just changing (by moult) from the immature dress to that of the adult has a fair amount of black on the back, though not on the rump. Perhaps, however, there is only much individual variation. In the spotless individuals the yellow collar on the hindneck is also more visible, while it is obsolete in the majority of specimens. The immature *male* is like the adult *female*. ♂ ad. "Iris crimson-lake; bill jet-black; legs plumbeous or plumbeous blue-grey; claws darker grey or brown." The *females* have the throat sometimes quite white, sometimes less so. The iris of the *female* and young *male* is brown.

Mr. Everett found this *Pachycephala* common on the island of Djampea. It resembles *P. fulvotincta* Wall. from Flores (Gadow, *Cat. B.* VIII. p. 196), which also varies somewhat, but has not so much orange on the breast, has the lesser wing-coverts black, the back not uniform as a rule, the *female* somewhat different in colour.

17. *Edoliosoma emancipata* sp. nov.

This new species, of which we have a fair series from Djampea only, is chiefly characterised in the *female*. The *male* very closely resembles that of *E. amboinense* Hartl. (as the species must be called according to Salvad., *Orn. Papuas*, II. p. 156,

not *E. ceramense*, as it is termed in *Cat. B.* IV. p. 47), but the wing seems to be slightly longer; the grey edges on the wing-coverts and secondaries are broader. The *female* differs entirely from that of *E. amboinense*, which is ashy brown above, in being above light slaty grey, and there is no fawn-coloured superciliary streak, as in the *female* of that species. The ear-coverts are light slaty grey, streaked with white. There is a slight brownish wash on the rump. The young bird is narrowly barred with dusky black on the upperside, as the remaining feathers in one of the *females* clearly indicate.

♂ ad. Wing 132—138 mm.; tail 113; culmen 25—26; width of bill at nostrils 9; tarsus 23. ♀ ad. "Iris chocolate-brown; bill jet-black; legs, feet, and claws greyish black." Wing 129—132 mm.

Several of the species of *Edoliosoma* are very closely allied, and a large material from many places is still required to understand them thoroughly.

The *male* of *E. timoriense* is quite different from *E. emancipata*, not having any black in the face. *E. tenuirostris* of Australia is much like it, but the wings and wing-coverts are bordered with grey only, not with grey and white outer edges; the *females* also differ.

18. *Lalage timoriensis* (S. Müll.).

Saley, Djampea, Kalao. (Büttik., *i.e.*, Saley.)

19. *Culicicapa helianthea* Wall.

♂. Saley. Identical with specimens from Celebes.

20. *Gerygone flaveola* Cab.

Like the specimen from Indralaman, but looking paler because not in such fresh plumage.

Two *males* from Saley.

21. *Myiagra rufigula* Wall.

Djampea and Kalao. ♀. "Iris dark brown; bill black; mandible pale blue, with black tip; legs and claws greyish black."

The *male* and *female* are well described in the *Cat. B.* The younger *female* (and *male*) are still more uniform above than the adult *female*, and the throat is still paler. This species bears much resemblance with *M. albiventris* from Samoa, but the greyish (not deep black) lores, the smaller bill, and the greater extent of the rufous colour underneath distinguish it without difficulty.

The species is otherwise an inhabitant of the Timor group of islands.

22. *Siphia omissa* Hartert.

See *antea*, pp. 71 and 157.

A fine series from Saley shows that the birds from that island entirely agree with those from Celebes. The *male* of *S. omissa* is paler blue above than that of *S. bangumae*, the bill is a little narrower, but altogether the differences between the *males* are trifling, while those between the *females* of the two species are very obvious.

The feet in *S. omissa* are described on the labels as "light purplish brown," while they are given as "dark brownish grey" on labels attached to skins of *S. bangumas* from Borneo, also collected by Mr. Everett. The legs of *S. omissa* look mostly much paler in dry skins than those of *S. bangumas*.

23. *Siphia djampeana* sp. nov.

♂ mari *S. omissae* similis, sed macula gulari alba, rostro majore, regione malari et auriculari nigris distinguendus. ♀ maris *S. omissae* colore, sed rostro majore.

Hab. Insula Djampea sic dicta.

A good series of this fine new *Siphia* from Djampea. It is remarkable that the *female* of *S. djampeana* does not resemble the *female* of *S. omissa*, but only differs from its own *male* in the almost total absence of the white throat-spot, thus closely resembling the *male* of *S. omissa*, or rather more so that of *S. bangumas*, which also has a tiny whitish spot just below the black chin. In fact it can only be distinguished from the *males* of *S. bangumas* and *S. omissa* by a slightly larger bill and darker, almost entirely black, ear-coverts and malar region.

The *male* of *S. djampeana* is above everywhere uniform blue, the forehead and a narrow line to over the eye lighter and brighter blue. Lores, from nostrils to eye, chin and malar region, with ear-coverts, black, the latter slightly tinged with blue. A white gular patch, larger in adults, smaller in young birds, under the chin; all the rest of the under surface orange-rufous. Under wing-coverts white, washed with orange-rufous. "Iris dark brown; bill black; legs and feet dark purplish grey; claws blackish." Wing 78—81 mm.; tail 67—69; tarsus 18—19; culmen 17.

The young bird is above brownish, spotted with orange-rufous; there is no black on the chin, and the feathers of the breast have blackish edges.

24. *Siphia kalaoensis* sp. nov.

♂ mari *S. djampeanae* similis, sed gula, jugulo, pectoreque albis haud difficile distinguendus. ♀ mari similis, sed macula gulari et pectoris lateribus tantum albis, itaque mari *S. djampeanae* simillima.

Hab. Insula Kalao sic dicta.

A good series of *males* and two *females* from Kalao. This species bears about, though not quite, the same relationship to *S. djampeana* as the latter does to *S. omissa*, the *male* of *S. djampeana* being obviously different, while the *female* of *S. kalaoensis* is practically indistinguishable from the *male* (not so from the *female*) of *S. djampeana*.

♂ ad. Upperside entirely like that of *S. djampeana*. On the underside the black chin is often washed with blue, the throat and breast are white, the abdomen pale orange-rufous, the under tail-coverts white, more or less washed with pale orange-rufous. Under wing-coverts white, a little washed with orange-rufous. The *female* is like the *male*, except that the breast is strongly washed with orange-rufous and that the under tail-coverts are coloured like the abdomen. The *female* is, therefore, practically indistinguishable from the *male* of *S. djampeana*, but the breast is paler. Wing 76—78 mm.; tail 65—68; tarsus 19—20; culmen 16—17. The *female* is a little smaller, with the wing 72 mm.

The increase in white on the underparts in these flycatchers from Celebes and Saleyer to Djampea and Kalao is very interesting, and it would be a pleasure to

know whether or not the other islands more to the south and south-east also have such forms, in which the white may still more increase in extent.

A closer examination of the fauna of Flores especially would, I believe, reveal many interesting forms, as the island is but imperfectly known.

25. *Rhipidura celebensis* Büttik.

This species was described by Dr. Büttikofer in his excellent review of the genus *Rhipidura* in *Notes Leyden Mus.* XV, p. 79, as coming from Makassar, Celebes. Future explorations will have to prove whether it ever occurs there, but I cannot help doubting it somewhat, as it was found by Everett and his men in Kalao and Djampea only, but not in Saleyer nor in Celebes. Dr. Büttikofer has been kind enough to compare our *male* from Kalao with his type, and found it identical with the latter. It is the only specimen Mr. Everett sent from Kalao, but there are two *males* and a *female* from Djampea. They have the jugular black spot not of such a deep black, the abdomen and breast not so pure white, but *more or less* tinged with fulvous, the forehead not so bright rufous, and the upper wing-coverts tipped with rufous. Notwithstanding these differences, they belong, I think, to the same species, as those from Djampea seem to be, all three, immature birds, one of them undoubtedly being young, and the characters in which they differ not being equally developed in them. The *male* (Djampea) has the "iris dark brown; bill dark brown; mandible ochreous, dark brown towards the tip; legs pale grey."

26. *Monarcha inornatus* (Garn.).

Common on Djampea Island.

♂. "Iris dark brown; bill pale slate-blue, whitish at tip; legs and claws dark slate-blue."

♀. "Iris dark brown; bill horn-black, white at the tip; legs slate-blue; claws brownish grey."

The specimens are what I believe to be typical *M. inornata*. They are slightly paler rufous on the abdomen than specimens from Peling and Banggai. See Mey. & Wieglesw., *Abh. univ. Ber. Mus. Dresden*, 1896, No. 2, p. 14.

27. *Monarcha everetti* sp. nov.

Monarcha mari chalybeo-atra, uropygio, supracaudalibus, pectore, abdomine, corporis lateribus, subcaudalibus, axillaribus, subalaribus, remigum pogoniis internis ad basin, caudae basi imo albis, remigibus lateribus tribus extimis latissime, quarta minore pro parte in apice albis. Femina supra brunnescente grisea, loris albidis, alis brunneis, subtus albida, ochraceo-rufa lavata, cauda nigra, albo notata, sicut in mari.

Al. ♂ 69 mm.; cand. 72; tars. 19; culm. 16.

Hab. Insula Djampea sic dicta.

A good series of adult *males* was collected on the island of Djampea in December 1895. They are black with a steel-blue gloss, the tail less glossy. The rump and upper tail-coverts, breast, abdomen, sides of body, axillaries, and under wing-coverts, inner webs of remiges towards the base, the utmost base of tail, broad tips to rectrices, about 25 mm. in first, about 20 mm. in second, about 15 mm. in third, and a small tip of a few mm. in fourth, white. Thighs black, some of the feathers with white tips. The primaries have more or less indistinct brownish edges in the middle of the outer webs. "Iris dark brown; bill and legs light blue; claws dark grey." Length

about 14 cm.; wing 66—69 mm.; tail about 70—72; tarsus 19; culmen 16—17. Several evidently immature specimens, *males*, have the mantle dark cinereous grey, but the steel-black colour of the adult *male* seems gradually to spread over it in one specimen, as if it was changing its colour. The feathers of the throat and jugulum in these specimens are tipped with white.

There is only one specimen, in abraded plumage, that is marked "♀." It differs entirely from the *male*, as we might expect in any *Monarcha* or *Piezorhynchus*. It is above cinereous grey, slightly washed with brown. Lores whitish. A spot behind the eye pale whitish grey. Wings dark brown, inner webs white towards the base. No white on rump and upper tail-coverts; tail as in the *male*. Under surface whitish, washed with pale orange-rufous, especially on the breast; abdomen almost white. Thighs pale brownish; under wing-coverts and axillaries dirty white. "Iris chocolate; bill pale lead-blue, black at apex; legs dark slate-blue; claws blackish." As this specimen comes from the same island, as the size of bill and markings of tail agree with those of the *male* (wings not exactly measurable, being much abraded and partly damaged), I do not at all doubt that this bird really is the *female* of *M. everetti* mihi, and we know that the *females* in this genus always differ from the *male*, in some cases even more strikingly than in this. The species belongs to *Piezorhynchus*, if that genus can be separated from *Monarcha*, as limited in the *Catal. of Birds*, Vol. IV. It does not agree with any of the known species, though the coloration is of a pattern common in so many birds.

28. *Pitta virginalis* sp. nov., or *Pitta irena virginalis* subsp. nov.

Pitta speeiei *P. irena* dietae similis sed macula mentali nigra minore (interdum indicata tantum), stria superciliari brunneacentiore et multo latiore, ala paulum brevior distinguenda. Ala 103—109 mm.

Hab. Insula Djampea sic dicta.

♂ ♀ ad. Bill horn-black (A. Everett) (evidently pale at base in *P. irena*—in skin). Iris dark brown; crown, nape, and side of head deep black; broad superciliary stripes from the base of the bill to the nape, where the two approach each other a little, deep buff, very faintly, hardly perceptibly, tinged with greenish towards the end; mantle, outer edges of remiges, greater wing-coverts, and tips of the black rectrices dark green; rest of remiges black, with a white speculum on the primaries. Under wing-coverts black; lesser wing-coverts and rump pale shiny sky-blue; upper wing-coverts black, with narrow dark green edges. Chin more or less black, generally for about 10 mm., in one for 13 mm., and in one white with a few black feathers only. (In *P. irena* black for about, at least, 25 mm., and reaching in a point towards the throat.) Beneath deep fawn-colour; throat white, shading into the fawn. Centre of lower abdomen, crissum, and under tail-coverts scarlet, on the abdomen tinged and mixed with black. Thighs fawn; legs and feet white, tinged with pinkish; claws dark grey.

Total length about 170—180 mm.; culmen 25; wing 103—109; tail 38—39; tarsus 35.

As said before, this beautiful and hitherto unknown form of *Pitta*, from an ornithologically hitherto quite virgin island, is nearest to *Pitta irena* from Timor and some other small islands of the Timor group, but is at once distinguished by the very broad (twice as broad) superciliary stripe of deep buff or fawn-colour, and by the smaller extent of the black on the chin, also by a slightly shorter wing.

Future explorations of the adjoining islands and larger series of *P. irena* must decide whether we have to keep the Djampea form as a species or as a subspecies. Of *Pitta irena* I have only seen two skins, one in the Tring Museum and one in the British Museum.

From *Pitta vigorsii*, from Banda, Dammar, Timorlaut, it is distinguished by some black on the chin (there is *none* in *P. vigorsii*), and by a differently coloured superciliary stripe, also slightly different dimensions; from *P. concinna*, from Lombok and Flores, also by a differently coloured superciliary stripe, which in the latter passes into a very pale blue behind the eye, and by much less black on the throat. *Pitta vigorsii*, *irena*, and *concinna* are different from each other, but at least as closely allied as *P. virginalis* to any of its congeners. Wishing to have a comparison made with the type, I sent a skin of my new species and our skin of *P. irena* to Dr. Büttikofer, who informed me that the latter entirely agreed with the type, while the one from Djampea "was unlike any *Pitta* in the Leyden Museum," where they have all the allied forms.

29. *Macropteryx wallacei* (Gould).

Both sexes from Saleyer. Not different from Celebes specimens.

30. *Collocalia esculenta* (L.).

Two *females* from Kalao. Wing in both 93 mm. long, which is considerably shorter than in our Celebes specimens. See Mey. & Wiglesw., *l.c.* No. 2, p. 14, where measurements from 69 to 101.6 mm. are given, and *antea*, p. 158.

31. *Collocalia francica* (Gm.).

Two fully-feathered nestlings and a number of nests and eggs from Pulau Batn, Djampea, taken on December 6th, 1895. At this date nests contained eggs (always two each), and young in all stages. The nests are good white "edible" ones, some (probably older ones) being less white, two nests or more often hanging together. The eggs, being large in proportion to the bird, measure 19.8 by 13.4, 20.4 by 12.9, 19 by 13.3 mm. The wings of the nestlings are not measurable. The tarsi have a few scanty feathers on them; the rump is of a pale brownish grey, not very obvious. It is a pity there is no adult bird with them.

32. *Caprimulgus macrurus* Horsf.

A typical *male* from Saleyer, wing 181 mm.; a *female*, wing 178 mm., and a nestling from Djampea.

33. *Halcyon chloris* (Bodd.).

Saleyser and Djampea. The bills measure as follows (from anterior end of nostril to tip): ♂ Saleyer, 40 mm.; ♂ Saleyer, 37 mm.; ♂ Djampea, 41 mm.; ♀ Djampea, 39.5 mm. On the whole the specimens from Celebes, and the islands north and east of it, seem to be somewhat short-beaked; but the individual variation is very great, even in the same country. See Mey. & Wigl., *l.c.* No. 2, p. 12, 1896.

34. *Alcedo ispidoides* Less.

Saleyser and Djampea.

35. *Eurystomus orientalis* (L.).

A pair from Djampea. I consider them to be typical *E. orientalis*. (See Meyer & Wigl., *l.c.* No. 2, p. 13.)

36. *Cuculus intermedius* Vahl.

Saleyey, Djampea, Kalao. Adult in grey plumage, all marked "*male*," some young; *females* in grey as well as in rufous plumage. In one adult *male* wing 7.95 inches long. (See Shelley, *Cat. B.* XIX, pp. 241 ff.)

37. *Centropus javanicus* Dumont.

Djampea and Kalao. ♂. "Iris chocolate-brown." ♀. "Iris dark brown" (Djampea).

38. *Cacatua sulphurea* (Gm.).

Two *females* from Djampea seem to belong to this species, though the bills are very small. They measure only 24 mm. from end of cere to tip. The wings 223 to 230 mm. They are exactly like Celebes specimens, except for the small size of the bills, and they do not belong to *C. parvula* from the Timor group, which hardly deserves more than subspecific rank, though it certainly is not the same as *C. sulphurea*. ♀. "Iris crimson-lake; orbital skin white; bill greyish black; feet dark grey; claws blackish."

39. *Tanygnathus megalorhynchus* (Bodd.).

Common on Djampea Island.

♀ ad. "Iris, before skinning, white (probably pale yellow in life?); bill deep wax-red; feet olivaceous grey; claws blackish grey." The *females* are considerably smaller than the *males*, specially with smaller beaks and shorter wings, but the variations in size are also remarkable apart from sex.

The distribution of this parrot is remarkable. Salvadori (*Cat. B.* XX, p. 428) gives it as follows: "Western coast of Northern New Guinea, Western Papuan Islands, Northern Moluccas or Halmahera group, Sanghir and Talant Islands; according to Meyer, also Togian Islands." *T. affinis* inhabiting the Southern Moluccas and *C. subaffinis* the Tenimber Islands, one might have expected these rather than *T. megalorhynchus* on Djampea.

40. *Trichoglossus forsteni* Bp.

This beautiful species was found to be common on Djampea Island. "The iris (♂) is orange; the bill orange-red; feet dark grey; claws brown." One specimen from Sunbawa, collected by Guillemard, in the Tring Museum, the same specimen which has been described in the *Cat. B.* XX, by Salvadori and will be figured in the monograph of the *Loriidae* by Mivart, has the head above intermixed with some dirty greyish bluish feathers, the ear-coverts more purple, and but an indication of the broad purplish blue band behind the greenish yellow band on the hindneck. It is moulting, and the plumage partly abraded. A specimen in the Leyden Museum, kindly lent me by Dr. Büttikofer, which has been compared with the type in the same museum, is perfectly alike. The wing of this species measures 139–146 mm. This species has only been recorded from Sunbawa!

41. *Strix flammea* L.

Kalao. Typical *S. flammea*, which has nothing to do with the large and powerful *Strix rosenbergi* of Celebes. "Bill white; feet sepia-brown; claws dark horn-grey."

42. *Ninox scutulata japonica* (Schleg.).

♀. Kalao. "Iris golden; bill olive-green, clouded with horn-black; feet wax-yellow; claws blackish brown."

43. *Baza reinwardti* (Müll. & Schleg.).

♂. December 1895, Djampea. "Iris yellow; cere, mandible, basal half of maxilla light plumbeous; apical half of maxilla jet-black; feet white; claws brown." The number and position of the bands in this widespread species vary considerably.

44. *Elanus hypoleucus* Gould.

December 1895, Kalao.

45. *Pernis* spec.

One specimen, marked *female*, November 1895, Saleyer. A large bird, remiges moulting, wing 440 mm. The whole underside is buff or ochraceous buff, some feathers (older ones) paler, others (the new ones) darker and brighter. The throat is surrounded by an irregular black band, the feathers of the lower throat and upper breast have narrow deep brown shaft-lines, but all the breast, abdomen, flanks, scapulars, and under wing-coverts are uniform, without a trace of bars or bands. Upperside dark brown as in most *Pernis*, not differing from many specimens of *P. ptilonorhynchus*. I believe this bird to belong to the latter species, but not to *P. celebensis*, unless it is an unknown plumage of the latter species, of which we do not yet know very much.

46. *Accipiter gularis* (Temm. & Schleg.).

In spite of the instructive articles of Gurney (*List Diurn. B. of Prey*, App. O, pp. 165—177) and Grant (*Ibis*, 1896, pp. 104—107), I found it difficult to name the three specimens from Djampea before me, but at last came to the conclusion that they must be (immature?) *A. gularis*. The breast is longitudinally marked in the two *females*, as well as in the one *male*; the line along the centre of the throat very narrow, and absent in one of the *females*. No shade of rufous anywhere on the underside. The fourth primary is longest, and 6 to 8 mm. longer than the fifth, while in an adult (rufous) *male* of what I consider to be *A. manillensis* the fifth primary forms the tip of the wing and is slightly longer than the fourth! I wish somebody would give distinctive characters for these birds of the *young* as well. The material at this Museum is but scanty at present.

♂. "Iris golden; cere Indian yellow; loreal region greyish green; bill black; basal portion bluish plumbeous; legs wax-yellow; claws black." ♀. "Iris golden; skin of orbital and loreal regions and cere dull yellowish green; bill black, basal portion light lead-grey; legs pale wax-yellow; claws black."

47. *Astur torquatus* (Temm.).

Adult and young specimens from Djampea and Kalao. The young bird is above brown; the feathers white at base, some of this white being shown on the hindneck;

all feathers margined with rusty rufous; shoulders deep rufous. Underside white; chin, throat, and breast longitudinally striped with brown; abdomen with more rounded pale rufous spots. Thighs entirely rufous, the feathers with paler edges. Quills more distinctly barred than adult birds. A *male* shows most instructively some of the barred feathers of the entirely different adult plumage on the breast. ♂ adult wing 195 mm., ♀ adult wing 230 mm. "Iris pale golden."

The species is widely spread. - Sharpe in the *Cat. B. I.* gives only Timor as its "habitat," but see Schlegel, *Mus. d'Hist. Nat. Pays-Bas Accipitres*, p. 91, etc.

48. *Tinnunculus moluccensis occidentalis* Mey. & Wigl.

Djampea and Kalao. Similar to those from Celebes (*antea*, p. 162).

49. *Spilornis rufipectus* Gould.

Saley, November 1895. Two adult birds. Throat slaty black; feathers under the eye and ear-coverts dark grey, somewhat in contrast with the throat, and specially so with its lower, darker part. In the adult bird from South Celebes (see *antea*, p. 161) all these parts are alike and much darker, while they are also nearly alike, but altogether very much paler, in a bird from North Celebes. These birds are very variable.*

50. *Pandion haliaetus leucocephalus* Gould.

1 ♀. Kalao, December 1895. Wing 440 mm. The head is nearly quite white, though there are some dark spots on the occiput. I am inclined to place this bird with the subspecies *leucocephalus*, which cannot possibly be called a species, the smaller size and the whiter head being the only characters to distinguish it, and both these being rather variable. I have before me, for example, in the Tring Museum, specimens from the Solomons with pure white head, as well as others which are more densely striped than any from North Asia, etc., before me now, though they agree in being generally a little smaller.

51. *Osmotreron wallacei* Salvad.

One *male* from Saleyer. It is exactly as brick-red on the mantle as the *male* from Indralaman which I mentioned *antea*, p. 163. It is possible that the specimens from South Celebes, including those from Saleyer, are all like these two, and in this case they would have to be recognised as a slightly differentiated form and would deserve a subspecific name. As the colour of the mantle seems to vary a little according to age or freshness of plumage, it is not possible to decide about this question from the scanty material now before me.

52. *Osmotreron wallacei pallidior* subsp. nov.

A series from Djampea and Kalao are closely allied to *O. wallacei typica* from Celebes, the *males* agreeing in the colour of the mantle with the *northern* specimens, and not with those from South Celebes and Saleyer, but being larger, with a stronger bill and a little longer wing, the head paler grey, the throat lighter and a little more washed with grey, the entire breast and abdomen of a paler green, the anal region

* I may here remark that my birds from Bunguran, Natuna Islands (Nov. Zool. I. p. 482 and II. p. 476), are, in my opinion, the same species as *Sp. salvadorii* Berl., *op. cit.* II. p. 73.—E. H.

more white and the under tail-coverts slightly paler. The brownish orange spot in front of the shoulders is very much paler and occupies a larger area. ♀ ad. "Iris orange; orbital skin vivid yellowish green; basal half of bill pale green, apical half ivory-white, with a faint green tinge; feet carmine; elaws light grey." Wing of *males* 157—161 mm.; tail 95—98; tarsus 20—22; bill from hind-end of nostrils to tip 16—17, height from angle of mandible 9. *Female* same dimensions.

This form resembles *O. sanghirensis*—which, however, appears to me to be only a subspecies of *O. wallacei*—in its powerful bill and its long wing, but it differs from it in colour, as it does from *O. wallacei typica*. It has nothing to do with *O. griseicauda*, as it has the black on the lateral tail-feathers as strongly developed as in *O. wallacei typica* and *sanghirensis*, if not more so.

The *female* of *O. wallacei pallidior* is chiefly remarkable for its paler mantle washed with greyish.

53. *Ptilopus melanocephalus* (Forst.).

Both sexes from Saleyer, Djampea, and Kalao. Büttikofer (*l.c.* p. 287) has already mentioned this form (under the name of *P. melanarchen* Salvad.) from Saleyer. It is certainly highly remarkable that Saleyer, which is so close to Celebes, has *P. melanocephalus* and not *P. melanospilus* from Celebes! The latter is without difficulty distinguished from *P. melanocephalus* by its throat-spot and under tail-coverts being orange and not lemon-yellow. This, and also *P. chrysorrhous* and *P. xanthorrhous*, can be distinguished from *P. melanocephalus* and from each other, though it is not always very easy, and they may after all be best considered subspecies; but, curiously enough, the most northern form, *P. bangueyensis* Meyer, is closest to the most southern form, *P. melanocephalus*, and there are some specimens (*males*) which I cannot with certainty distinguish from typical *P. melanocephalus*, though the black occipital spot is *mostly* (but not always!) tinged with purple. (See on the subject Büttik., *l.c.*; Salvad., *Cat. B.* XXI. pp. 142-6; Mey. & Wigl., *Abh. und Ber. Mus. Dresd.* 1896, No. 2, p. 19.)

Salvadori himself has (*Cat. B.*) not sustained his *P. melanarchen*, but united the birds from Java, Flores, Sumbawa, Sumba, and Lombok under the name of *P. melanocephalus*. Büttikofer's remark (*l.c.*) seems to strengthen Salvadori's more recent view, though perhaps Javan specimens are, on the whole, a *little* paler yellow on the throat. The birds from Saleyer, Djampea, and Kalao do not differ from each other. ♂ (Djampea). "Iris yellow, with orbital ring and bill bright yellow-green; feet carmine; elaws dark brownish grey." *Males*: wing 118—119 mm.; *females*: 113—115 mm.

54. *Carpophaga rosacea* (Temm.).

Five specimens from Djampea. ♂. "Iris crimson-lake; bill dark grey, clouded with black; cere dull carmine; feet dull dark carmine; claws dark grey."

The rosy vinous colour of the head and breast and abdomen varies much. In some specimens, I think those that have worn their plumage longer, or perhaps in less mature ones, it is almost entirely absent. This species is widely spread, reaching from the Timor group to the Tenimber and Key Islands, to Halmahera and Celebes. (Salvad., *Cat. B.* XXI. p. 199.)

55. *Carpophaga concinna* Wall.

Several specimens from Djampea. They are perfectly similar to those from other localities, the vinous tinge on the nape mostly very strong.

Comparing Key specimens with a very large series from many localities (Sanghir Islands, Siao, Dammar, Timorlaut, and Djampea), I do not find that they differ in size, but that the entire under surface is not light grey, but creamy white, with only a very faint cinereous tinge. I consider it worth a subspecific name, and propose for it the name of *C. concinna separata*.

56. *Myristicivora bicolor* (Scop.).

Djampea.

57. *Macropygia macassariensis* Wall.

A fine series of this rare pigeon from Djampea and Saleyer. There is evidently no difference between the sexes, except that the wing of the *female* is about 5 to 10 mm. shorter. The *male* has "the iris with an outer ring pink and an inner ring blue. The pink ring becomes orange after the bird has been dead for some while. Bill very dark sepia-brown; the cere light carmine; the feet carmine." The adult bird is well described by Büttikofer in his list of Saleyer birds, p. 288, and by Salvadori in *Cat. B. XXI.* p. 343. Younger birds are darker; the head is deep blackish brown, each feather tipped with rufous. Breast and abdomen washed with rusty brown, the upper wing-coverts margined with rusty rufous. The iris of the younger birds is "chocolate-brown; bill and feet dark sepia-brown."

58. *Esacus magnirostris* Geoff.

December, Kalao.

59. *Gallinago megala* Swinh.

November 22nd, Saleyer.

60. *Tringa ruficollis* Pall.

November, Saleyer.

61. *Himantopus leucocephalus* Gould.

Saleyér.

62. *Totanus littoreus* (L.) (= *glottis* L.).

Saleyér.

63. *Totanus calidris* (L.).

Saleyér.

64. *Charadrius fulvus* Gm.

Saleyér.

65. *Streptilas interpres* (L.).

Saleyér.

66. *Poliolimnas cinereus* (Vieill.).

Djampea, December 1895.

67. *Erythra phoenicura* (Forst.).

Saleyér. Büttikofer has already recorded this species from Saleyer.

68. *Nycticorax caledonicus* (Gm.).

♀. Djampea, December 1895. "Iris golden; ophthalmic and loreal regions, base of maxilla, with a line on the sides, and the mandible light grass-green; rest of maxilla and small stripe near apex of mandible black; legs light yellowish green; claws brownish grey."

69. *Butorides javanicus* (Horsf.).

♂. November 22nd, Saleyer.

70. *Bubulcus coromandus* (Bodd.).

♂. November 1895, Saleyer.

71. *Nettion gibberifrons* (Mull.).

One pair, a *male* and a *female*, from Saleyer. Again the *female* has a distinctly shorter bill, though there is no difference in the feet, and the wing is only a trifle shorter. (See *antea*, p. 165.)

72. *Microcarbo melanoleucus* (Vieill.).

♀. December 1895, Djampea.

73. *Megapodius duperreyi* Less. & Garn.

Djampea and Kalao. ♂. "Iris cinnamon-brown; bill dull Indian yellow; skin of ophthalmic and loreal regions and of throat dull crimson; legs vermilion-red; upper surface of toes blackish brown; claws black."

A mound with a large number of eggs was found on Kalao on December 21st. The eggs measure from 82 to 88 mm. by 50 to 52 mm. The species is known from Bonerate and Saleyer. (Meyer & Wiglesw., *Abh. und Ber. Mus. Dresden*, 1896, No. 1, p. 16.)

O. Grant was evidently justified in uniting the different forms that have been separated of this bird, but if it should be found possible to separate some sub-specific forms, then it would seem that the birds under consideration would belong to *M. gouldi* Gray.

Valuable as the present collections undoubtedly are, they are probably not exhaustive for any of the islands; therefore any conclusions we may draw from them must be subject to alterations, or even be erroneous for a great part, when we come to know everything from all these islands. Even among the few birds collected on Saleyer by Max Weber there was a land-bird, *Pachycephala orpheus*, which was not obtained by Everett. The differences between Kalao and Djampea would be great if we could with any certainty judge from the absence of a species in the collection from one island that it did only occur on the other. This, however, would be hazardous; but from the difference between the two new species of *Siphia* on the two islands, and from the absence of some of the most numerous species from Djampea among the Kalao skins, and *vice versa*, we must conclude that the ornithology of Djampea and Kalao is not entirely the same, though, of course, much alike in its general character. From the present material it would seem that both Djampea and Kalao have as much, or rather more, in common with the Lesser Sunda Islands and Timor than with Celebes. Besides a few forms probably peculiar to them

(*Oriolus boneratus*, *Siphia djampeana* and *kalaoensis*, *Monarcha everetti*, *Pachycephala everetti*, *Pitta virginialis*, *Edoliosoma emancipata*), and some (*Cinnyris teysmanni*, *Rhipidura celebensis*, *Dicaeum splendidum*) of which the distribution outside of these islands is, in my opinion, doubtful, and further, besides many widespread species, we find of true Celebesian species on Djampea, for example, the *Myzomela chloroptera* and *Macropygia macassarensis*. On the same island is a common bird, the *Trichoglossus forsteri*, hitherto only recorded from Sumbawa! From Timor we have invaders, as *Myiagra rufigula* and *Lalage timoriensis*, and we might also count as such the *Pitta* and *Dicaeum*, which have their allies there, and others. But I cannot see a species hitherto known from Flores, except some of the widespread forms, among the birds of Djampea and Kalao, nor are the affinities of any of the new forms with the Flores group, but rather with species from Timor or Celebes, with the exception of *Pachycephala everetti*. It is, of course, possible that this is partly due to our imperfect knowledge of the fauna of Flores, but we might possibly better understand the greater connection with the Timor group if we knew the birds of Ombai, Pantar, Lomblem, Solor, Adonara, Kalatua, etc., of all of which we know very little or nothing at all.

An interesting feature is also the occurrence of the large *Tanygnathus megalorhynchus* on Djampea. Being chiefly an inhabitant of the Northern Moluccas (its place being taken by *T. affinis* in the Southern Moluccas), it is also known from some islands skirting round the large island of Celebes, such as Sanghir, Talaut, and the Togians, but never as yet found on the mainland of Celebes itself.

The Celebesian species have evidently spread down to Djampea and Kalao by the way of Saleyer, and it seems not very probable that forms inhabiting Djampea and Kalao and not Saleyer are found in Celebes (cf. *Cinnyris teysmanni*—a bright and lively little bird, which is not likely to be overlooked where it is anything like common).

A glance at the lepidoptera seems to show that they are much more related to the fauna of the Lesser Sunda Islands, Flores, Timor, etc., than to that of Celebes.

The ornithology of Saleyer is evidently that of South Celebes in general, but some few forms of the Timor region seem to have invaded it, such as *Pachycephala orpheus* (see Büttikofer, *l.c.*), *Lalage timoriensis*, *Calornis minor*, the latter two (and most likely *ciâ* Saleyer) extending also to South Celebes. *Cuprinulphus macrurus* also seems to have reached Saleyer from the south, as it is not of usual occurrence in Celebes, if found there at all.

There are zoologists who are of the opinion that the distribution of such unwearied creatures as the birds, which may fly in one night to an island hundreds of miles distant from another (though certainly not from Egypt to Heligoland, as Gütke wishes to make one believe, without even an indication of proof), is of less value than that of such stationary animals as snails, shells, etc. However, I am not of the same opinion. Experience teaches us that birds on small islands are as much, and often much more, differentiated than any other animals. This is quite easy to understand, for birds, on account of their strong wings, are able to resist the agencies of distribution: they cannot be driven from island to island with wood or weeds like shells and insects; they can resist even a strong wind, while insects never can, but are carried away by it. In warmer climates most species find sufficient insects or vegetable food throughout the year, the soil not being covered with snow and ice, nor all the lower life disappearing for a long period. Therefore they are *very* stationary, and must be

looked upon as very important for the limitation of zoogeographical areas; but it is quite possible, and sometimes evident, that their distribution does not exactly correspond with that of other classes of animals, as totally different agencies may have acted upon them. The currents of the sea, for example, might have been acting in the dispersal of shells, while birds are not influenced by them. All such questions are as yet but little settled, and any material is welcome to clear them up.

I append a list of the species at present known from the three islands. In that of the Saleyer birds I have also inserted those recorded by Büttikofer and not found by Everett. They are only four, and the name of the author (Büttik.) is added to them.

The species described as new in this article are marked with an asterisk (*).

SALEYER.	DJAMPEA.	KALAO.
1. <i>Pratincola caprata</i> .	1. <i>Dicaeum splendilum</i> .	1. <i>Phylloscopus borealis</i> .
2. <i>Phylloscopus borealis</i> .	2. <i>Cinnyris teysmanni</i> .	2. <i>Cinnyris teysmanni</i> .
3. <i>Cinnyris frenata dissentiens</i> .	3. <i>Myzomela chloroptera</i> .	3. <i>Zosterops intermedia</i> .
4. <i>Myzomela chloroptera</i> .	4. <i>Zosterops intermedia</i> .	4. <i>Anthus gustavi</i> .
5. <i>Zosterops intermedia</i> .	5. <i>Anthus gustavi</i> .	5. <i>Motacilla flava</i> .
6. <i>Motacilla flava</i> .	6. <i>Artamus leucogaster</i> .	6. <i>Munia molucca</i> .
7. <i>Munia molucca</i> .	7. <i>Calornis minor</i> .	7. <i>Oriolus boneratensis</i> .
8. <i>Artamus leucogaster</i> .	8. <i>Oriolus boneratensis</i> .	8. <i>Lalage timoriensis</i> .
9. <i>Calornis minor</i> .	9. <i>Pachycephala everetti</i> (*).	9. <i>Myiagra rufigula</i> .
10. <i>Dicrurus leucops</i> .	10. <i>Lalage timoriensis</i> .	10. <i>Siphia kalaoensis</i> (*).
11. <i>Pachycephala teysmanni</i> .	11. <i>Edoliosoma emancipata</i> (*).	11. <i>Rhipidura celebensis</i> .
12. „ <i>orphea</i> (Buttik.).	12. <i>Myiagra rufigula</i> .	12. <i>Collocalia esculenta</i> .
13. <i>Lalage timoriensis</i> .	13. <i>Siphia djampeana</i> (*).	13. <i>Cuculus intermedius</i> .
14. <i>Culicicapa helianthea</i> .	14. <i>Rhipidura celebensis</i> .	14. <i>Centropus javanicus</i> .
15. <i>Gerygone flaveola</i> .	15. <i>Monarcha inornatus</i> .	15. <i>Strix flammea</i> .
16. <i>Siphia omissa</i> .	16. „ <i>everetti</i> (*).	16. <i>Ninox scutulata japonica</i> .
17. <i>Macropteryx wallacei</i> .	17. <i>Pitta virginalis</i> (*).	17. <i>Elanus hypoleucus</i> .
18. <i>Caprimulgus macrurus</i> .	18. <i>Collocalia francaia</i> .	18. <i>Astur torquatus</i> .
19. <i>Haleyon chloris</i> .	19. <i>Caprimulgus macrurus</i> .	19. <i>Tinnunculus moluccensis</i>
20. <i>Alcedo isipda bengalensis</i> (Buttik.).	20. <i>Haleyon chloris</i> .	<i>occidentalis</i> .
21. <i>Alcedo isipdoides</i> .	21. <i>Alcedo isipdoides</i> .	20. <i>Pandion haliaetus leucocephalus</i> .
22. <i>Cuculus intermedius</i> .	22. <i>Eurystomus orientalis</i> .	21. <i>Osmotreron wallacei pallidior</i> (*).
23. <i>Pernis spec.</i>	23. <i>Cuculus intermedius</i> .	22. <i>Ptilopus melanocephalus</i> .
24. <i>Spilornis rufpectus</i> .	24. <i>Centropus javanicus</i> .	23. <i>Esacus magnirostris</i> .
25. <i>Haliaetus leucogaster</i> (Buttik.).	25. <i>Cacatua sulphurea</i> .	24. <i>Megapodius duperryi</i> .
26. <i>Osmotreron wallacei</i> .	26. <i>Tanyguathus megalorhynchus</i> .	
27. <i>Ptilopus melanocephalus</i> .	27. <i>Trichoglossus forsteni</i> .	
28. <i>Macropygia macassaricensis</i> .	28. <i>Baza reinwardti</i> .	
29. <i>Gallinago megal.</i>	29. <i>Accipiter gularis</i> .	
30. <i>Tringa ruficollis</i> .	30. <i>Astur torquatus</i> .	
31. <i>Himantopus leucocephalus</i> .	31. <i>Tinnunculus moluccensis</i>	
32. <i>Totanus littoreus</i> .	<i>occidentalis</i> .	
33. „ <i>calidris</i> .	32. <i>Osmotreron wallacei pallidior</i> (*).	
34. „ <i>hypoleucus</i> (Buttik.).	33. <i>Ptilopus melanocephalus</i> .	
35. <i>Charadrius fulvus</i> .	34. <i>Carpophaga rosacea</i> .	
36. <i>Streptilas interpres</i> .	35. „ <i>concinna</i> .	
37. <i>Erythra phoenicea</i> .	36. <i>Myristicivora bicolor</i> .	
38. <i>Butorides javanicus</i> .	37. <i>Macropygia macassaricensis</i> .	
39. <i>Bubulcus coromandus</i> .	38. <i>Poliolimnas cinereus</i> .	
40. <i>Nettion gibberifrons</i> .	39. <i>Nycticorax caledonicus</i> .	
	40. <i>Microcarbo melanoleucus</i> .	
	41. <i>Megapodius duperryi</i> .	